REMARKS

The Official Action of 10 July 2007 has been carefully considered and reconsideration of the application as amended is respectfully requested.

The courtesy of Examiner Preeti Kumar in conducting a telephone interview with the undersigned and Jeff Tsai on 9 January 2008 is acknowledged with appreciation. A summary of what transpired in the interview is provided below in connection with a response to the Official Action.

By this amendment, Applicant adds new claims 14-16 more completely to define the subject matter which Applicant regards as his invention. New claim 14 limits the etching of the recited printed fabric in accordance with the description in the specification as filed in paragrph [0021] on pages 9-10 by requiring that the etching be performed by immersing the printed fabric in a vessel containing the etching agent. As discussed in the interview, this recitation further distinguishes the claimed invention from the cited prior art in the manner discussed below.

Claims 1-3 and 6-13 stand rejected under 35 USC 102(b) as allegedly being anticipated by or, in the alternative, under 35 USC 103(a) as allegedly being obvious over Kielbania. Applicant respectfully traverses these rejections.

As discussed in the interview, all claims of record comprise at least two steps, including a

first step of applying a printing paste comprising the transparent printing developer onto the surface of a synthetic fiber fabric to form a printed fabric, and a second step of treating the printed fabric with an etching agent. The Examiner's position, as detailed in the Official Action and amplified in the interview, is that Example 18 in the reference shows both a claimed printing developer (i.e., quaternary ammonium monomers), a claimed etching agent (i.e., sodium bicarbonate) and a step for applying them to a synthetic fabric. The Examiner further contends that the product would inherently result in an etching of the synthetic fabric surface described in Example 18. Applicant respectfully disagrees and submits that, in any event, the method would not result in a translucent pattern.

As Applicant pointed out in the interview, all claims require separate steps of (a) printing with the developer to form a printed pattern, and (b) treating **the fabric surface** with the etching agent only **after formation of the printed pattern**. Moreover, the claims require that the etching step result in the formation of a **translucent pattern** in the fabric. In contrast, in the cited reference, the quaternary ammonium monomers are used as crosslinkers for producing the crosslinked polymers of Kielbania, and the sodium bicarbonate is used as a catalyst for the crosslinking reaction. As a consequence, Kielbania applies the sodium bicarbonate **in the printing paste** prior to applying the printing paste to the fabric substrate (see Example 18) and thus teaches away from the separate application of sodium bicarbonate to the fabric surface after application of the printing paste. The paste that is applied to the fabric in Kiebania Example 18 would not comprise a quaternary ammonium salt, but would comprise a polymer crosslinked with what were formerly quaternary ammonium monomers.

As discussed in the interview, the claimed process produces a fabric with a translucent pattern that has a difference in transparency from the other parts of the fabric (page 4, lines 1-6). As can be seen from the fabric specimen filed on March 20, 2007, the translucent pattern is more transparent than the other parts of the fabric. In other words, because there is an etching step in which the etching agent is accelerated by the printing developer in a select area of the fabric, that area will have relatively less material remaining than the other parts of the fabric, thereby becoming more transparent than the other parts of the fabric.

This is in contrast with Kielbania, which is concerned with adhering polymers to polyolefins to serve as "a coating, a tiecoat, an adhesive or a binder" (see Abstract). As noted by the Examiner in the Official Action, Kielbania teaches a conventional printing paste prepared of three major ingredients: pigment, thickener and binder. Thus, example 18 of Kielbania is directed to "Pigment Printing". Clearly, Kielbania is concerned with adding pigment or dye to the fabric, and does not show or suggest etching to form a translucent pattern on the fabric as required by the claimed invention. Moreover, the "cut clear" to which the Examiner refers in the Official Action is a viscosity builder in the paste of Kielbania and is not used to accelerate an etching agent in any etching step. Thus, even assuming for the sake of argument that the components of Kiebania's paste were applied in separate steps, there is nothing to show or suggest that the same would be applied in amounts and/or under conditions sufficient to produce a translucent pattern in the fabric. To the contrary, Kielbania teaches the process described therein results in an addition to, rather than a subtraction from (i.e. etching), the material of the fabric.

In view of the above, Applicant respectfully submits that all claims presently of record patentably distinguish from the reference. Claims 14-16, which require that the etching step is performed by immersing the fabric in a vessel comprising the etching agent, further distinguishes from the reference because the reference teaches that the sodium bicarbonate is applied with the paste, i.e. only where the printing paste is applied. Accordingly, if the printing paste of the reference were applied only to select portions of a fabric, the sodium bicarbonate would only be applied to such select portions. There would be no motivation or reason to immerse the Kielbania fabric as a whole in an etchant composition.

Accordingly, Applicant respectfully submits that the prior art rejections of record should be withdrawn. The sole remaining rejection of record is a rejection of claims 1 and 6 under 35 USC 112, second paragraph, because the term "synthetic fiber fabric" is allegedly indefinite. Applicant respectfully traverses this rejection and submits that the term is well known to those of skill in the art. As evidence to support this, Applicant transmitted to the Examiner prior to the interview, and resubmits herewith, (a) a listing of 44 patents in which the term appears in the patent claims, and (b) a printout from Wikipedia.

In view of the above, Applicant respectfully submits that all rejections and objections of record have been overcome and that the application is now in allowable form. An early notice of allowance is earnestly solicited and is believed to be fully warranted.

Respectfully submitted,

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USPTO Patent Full-Text and Image Database

Searching US Patent Collection...

Results of Search in US Patent Collection db for:
ACLM/"synthetic fiber fabric": 44 patents.
Hits 1 through 44 out of 44

Jump To

Refine Search ACLM/"synthetic fiber fabric"

	PAT. NO.	Title
1	7,128,977	Silicone coating composition and release sheet
2	7,117,633	Foliage wrap thermal bag
3	6,939,583	Fabric for use in ink-jet printing, a method for preparing such fabric and printed goods made by ink-jet printing of the fabric
4	6,602,544	Mineral compound composite textile material and method of manufacturing
5	6,585,555	Temperature sensitive color changing water toy
6	6,469,242	Thin-film solar cell module and method of manufacturing the same
7	6,338,769	Process for forming interrupted material with backing
8	6,148,868	Reed with doglegged blades for water jet loom and weaving method using the same
9	6,145,686	Fume, fire, and flash explosion containment apparatus using a fabric enclosure
10	6,124,220	Laminated board and process for production thereof
11	6,116,002	Baler with improved guide
12	6,108,903	Connecting member of a circuit substrate and method of manufacturing multilayer circuit substrates by using the same
13	5,878,681	Embroiderer transfer
14	5,877,256	Liquid silicone rubber coating composition for application to air bags
15	5,695,234	Carrying device for shopping bags
16	5,601,115	Multiport sampling valve
17	5,484,647	Connecting member of a circuit substrate and method of manufacturing multilayer circuit substrates by using the same
18	5,477,965	Packaging element for stacked printed products
19	5,476,459	Disposable urine and fecal waste containment product

20 5,474,839 Surface-treated apparel material
21 5,402,742 Trapeze for surfers and sailors
22 5,367,123 Electrically conductive sheath for ribbon cable
23 5,296,298 Silicone rubber composition and silicone rubber-processed fabric
24 5,235,128 Separable missile nosecap
25 5,190,694 Article for suppressing foam and method for suppressing foam
26 5,072,623 Double bladder fluid containment system
27 5,030,229 Disposable urinary pad
28 4,964,174 Gloves for mechanics
29 4,844,969 Orthopedic bed structure
30 4,680,598 Chromogenic materials employing fluoran compounds
31 4,629,651 Two phase hardy fabric finish
32 4,510,282 Aqueous dispersions for coating materials
33 4,426,297 Diester composition and textile processing compositions therefrom
34 4,394,126 Diester composition and textile processing compositions therefrom
35 4,393,634 Roofing system and needle punched impregnated synthetic fiber fabric
36 4,381,985 Membrane construction
37 4,263,790 Method for knitting and severing synthetic pile loop fabrics
38 4,195,637 Catheter arrangement, method of catheterization, and method of manufacturing a dilatation element
39 4,089,783 Filter
40 4,073,732 Media for filtering blood
41 3,976,342 Method and apparatus for reducing fretting wear between relatively moving parts
42 3,958,932 Flame-resistant textiles through finishing treatments with vinyl monomer systems
43 3,954,623 Blood filtration unit
44 3,937,042 Reusable water softener system for clothes washer

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Synthetic fiber

From Wikipedia, the free encyclopedia

Synthetic fibres are the result of extensive research by scientists to improve upon naturally occurring animal and plant fibres used in making cloth and rope.

In general, synthetic (manmade) fibres are created by forcing, usually through extrusion, fibre forming materials through holes (called spinnerets) into the air, forming a thread. Before synthetic fibres were developed, artificial (manufactured) fibres were made from cellulose, which comes from plants.

The first artificial fibre, known as artificial silk from 1855 onwards, became known as viscose around 1894, and finally rayon in 1924. A similar product known as cellulose acetate was discovered in 1865. Rayon and acetate are both artificial fibres, but not truly synthetic, being made from wood. Although these artificial fibres were discovered in the mid-nineteenth century, successful modern manufacture began much later (see the dates below).

Nylon, the first synthetic fibre, made its debut in the United States as a replacement for silk, just in time for World War II rationing. Its novel use as a material for women's stockings overshadowed more practical uses, such as a replacement for the silk in parachutes and other military uses.

Common synthetic fibres include:

- Rayon (1910) (artificial, not synthetic)
- Acetate (1924) (artificial, not synthetic)
- Nylon (1939)
- Modacrylic (1949)
- Olefin (1949)
- Acrylic (1950)
- Polyester (1953)
- PLA (2002)

Specialty synthetic fibres include:

- Vinyon (1939)
- Saran (1941)
- Spandex (1959)
- Vinalon (1939)
- Aramids (1961) - known as Nomex, Kevlar and Twaron
- Modal (1960's)
- PBI (Polybenzimidazole fibre) (1983)
- Sulfar (1983)
- Lyocell (1992)
- Dyneema/Spectra (1979)
- M-5 (PIPD fibre)
- Orlon
- Zylon (PBO fibre)

- Vectran (TLCP fibre) made from Vectra LCP polymer

Other synthetic materials used in fibres include:

- Acrylonitrile rubber (1930)

Modern fibres that are made from older artificial materials include:

- Glass Fiber is used for:
  - industrial, automotive, and home insulation (Fiberglass)
  - reinforcement of composite and plastics
  - specialty papers in battery separators and filtration
- Metallic fiber (1946) is used for:
  - adding metallic properties to clothing for the purpose of fashion (usually made with composite plastic and metal foils)
  - elimination and prevention of static charge build-up
  - conducting electricity to transmit information
  - conduction of heat

References

- The original source of this article and much of the synthetic fiber articles (copied with permission) is Whole Earth magazine, No. 90, Summer 1997. www.wholeearth.com (http://www.wholeearth.com/)

See also

- Inventory of Synthetic Fibers (http://www.wholeearthmag.com/ArticleBin/113.html)

Retrieved from "http://en.wikipedia.org/wiki/Synthetic_fiber"

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